

Among its many end uses, our fully-bleached kraft pulp is a prime ingredient in quality printing papers, such as the coated paper shown here in the form of printed brochures streaming along a conveyor belt from a high-speed, full-color, offset print-

ing press. The pressman regularly spot-checks the printed sheet for any possible printing imperfections. The continuous paper sheet, shown running in the upper left background, must have the toughness to withstand rapid cutting, folding and

other finishing operations, as well as the ability to take the most delicate printed impressions. (Photograph, courtesy Consolidated Papers, Inc. of Wisconsin Rapids, Wisconsin.)

COVER In just over a decade we have grown from a company supplying principally newsprint, to a diversified forest products complex as illustrated by our various products on the cover shown in the process of moving to their respective markets. The completion of our major expansion program at the end of 1976, discussed on page 5, will help to strengthen our earnings through increased sales, greater product diversification and more effective use of our wood resources.

HIGHLIGHTS OF '76

1. Net earnings in 1976 of \$4.9 million or \$1.35 a share were down from \$6.4 million or \$1.78 a share in 1975.
2. Record sales of \$136.3 million in 1976 were 28.8 percent higher than \$105.8 million in 1975 due to higher shipments in 1976 and increased newsprint prices that went into effect during the year.
3. Our new 250,000 ton-per-year bleached kraft pulp mill started up in 1976 thus completing the \$191 million expansion and diversification program which also included construction of a waferboard-particleboard plant and expansion of our stud lumber capacity.
4. A refinancing in early 1977 will provide \$50 million (U.S. funds) to improve working capital which showed a deficiency of \$48.5 million at the end of 1976.

SCOREBOARD

	1976	1975
<i>'000 omitted</i>		
Net sales: Pulp and paper	\$124,371	\$100,508
Building products.	11,943	5,259
Total.	136,314	105,767
Operating profit	22,156	24,494
Earnings before income taxes.	8,764	11,815
Income taxes.	3,897	5,388
NET EARNINGS: Total amount	4,867	6,427
Per share	1.35	1.78
Cash flow.	17,796	23,848
Expenditures on fixed assets.	72,399	76,540
Working capital (deficiency) at year end.	(48,482)	(16,296)

Ten-year shipment and financial summaries are shown on pages 21, 22 and 23.

On Inside Pages

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Dollars in this report are Canadian unless otherwise identified. Amounts per share are based on total shares issued up to the end of the respective year.



Our Company

The Great Lakes Paper Company, Limited was incorporated under the laws of Ontario in 1936. We manufacture newsprint paper, bleached kraft pulp, stud lumber, waferboard and particleboard. Our mill and head office are at Thunder Bay, Ontario. Mailing address: Box 430, Thunder Bay, Ont., P7C 4W3.

Newsprint Services

Lake Superior Newsprint Co., Chicago, servicing of newsprint paper contracts: BRUCE FALLOWS, *president*; W. D. FROST and O. E. BABCOCK, *vice-presidents*.

Sale of Pulp

Lake Superior Pulp & Paper Inc., Chicago and White Plains, N.Y., sale of kraft pulp: BRUCE FALLOWS, *president*; R. L. NASH, *executive vice-president*.

Agents and Registrar

Our common share transfer agents are The Royal Trust Company, Toronto, Montreal, Calgary and Regina, and the Bank of Montreal Trust Company in New York. Our registrar is The Canada Trust Company, Toronto, Montreal, Calgary and Regina.

Shareholders' Meeting

Our shareholders' meeting will be held at 11:30 a.m. Eastern Standard Time in the Confederation Room of the Royal York Hotel, Toronto on Tuesday, April 19, 1977.

Board of Directors at December 31, 1976

C. R. BOWLES	Thunder Bay	1964
<i>vice-president, finance, Great Lakes Paper Company</i>		
KEITH CAMPBELL	Montreal	1971
<i>vice-president, Canadian Pacific Limited</i>		
*C. J. CARTER	Thunder Bay	1947
<i>president, Great Lakes Paper Company</i>		
*PERCY M. FOX	Bermuda	1952
<i>chairman of the board, Great Lakes Paper Company</i>		
C. J. JEFFERY	Thunder Bay	1947
<i>executive vice-president, Great Lakes Paper Company</i>		
*IRWIN MAIER	Milwaukee, Wisconsin	1968
<i>chairman, The Journal Company (publishers of The Milwaukee Journal)</i>		
*R. G. MEECH, Q.C.	Toronto	1936
<i>barrister and solicitor</i>		
JOHN N. PATERSON	Thunder Bay	1975
<i>executive vice-president and general manager, N. M. Paterson & Sons Limited</i>		
B. H. RIDDER, JR.	St. Paul, Minnesota	1957
<i>vice-chairman of the board, Knight-Ridder Newspapers, Inc.</i>		
MURRAY D. SEELEY	Thunder Bay	1956
<i>executive vice-president, operations, Great Lakes Paper Company</i>		
*IAN D. SINCLAIR	Montreal	1969
<i>chairman and chief executive officer, Canadian Pacific Limited</i>		
W. J. STENASON	Montreal	1972
<i>executive vice-president, Canadian Pacific Investments Limited</i>		
G. GORDON STRONG	Canton, Ohio	1968
<i>chairman of the board, Thomson Newspapers, Inc.</i>		
J. G. TREZEVANT	Chicago, Illinois	1975
<i>executive vice-president, Field Enterprises, Inc., Newspaper Div.</i>		

*Members of the Executive Committee

Years denote beginning of connection with the company.

Management at December 31, 1976

PERCY M. FOX, <i>chairman of the board</i>	1952
C. J. CARTER, <i>president</i>	1947
C. J. JEFFERY, <i>executive vice-president</i>	1947
MURRAY D. SEELEY, <i>executive vice-president, operations</i>	1956
C. R. BOWLES, <i>vice-president, finance</i>	1964
W. J. STENASON, <i>vice-president</i>	1972
M. CEBROWSKI, <i>vice-president, mill operations</i>	1964
M. R. MCKAY, <i>vice-president, woodlands operations</i>	1944
R. E. CHAMBERS, <i>vice-president, engineering and services</i>	1959
M. G. REA, <i>secretary</i>	1969
K. E. WINROW, <i>comptroller</i>	1971
D. D. MORROW, <i>assistant treasurer</i>	1964
F. H. TOLLEFSEN, <i>manager, information services</i>	1966

REPORT TO THE SHAREHOLDERS

An important milestone in the history of the company was reached late in 1976 with the start-up of our new kraft pulp mill thus ending our major expansion and diversification program which began in 1973, discussed on page 5. The completion of this huge undertaking was due to the combined efforts of a great many skilled and talented people in our company as well as specialists from many other organizations. On behalf of our directors, I extend congratulations to everyone responsible for this fine achievement and express our thanks for their untiring efforts.

We would also like to thank our shareholders without whose patient support the expansion program could not have become a reality. With our enlarged and diversified forest products complex in operation, new and much greater opportunities for growth are now open to us. Despite the current weakness in our markets and some uncertainties ahead, as discussed in our outlook on page 10, we look forward to improved earnings in the years ahead.

We wish to reassure our shareholders that we are ever mindful of our obligation to provide an appropriate return on their investment at the earliest opportunity.

Our executive vice-president, Cecil J. Jeffery, has announced plans to retire from the company on April 30, 1977, completing 30 years of service. Mr. Jeffery is widely respected throughout

our company and the industry because of his broad knowledge of pulp and paper making and his outstanding leadership qualities. He will be sorely missed by his fellow directors and his many friends throughout the company.

Since this announcement, Murray D. Seeley has been gradually assuming the administrative duties handled by Mr. Jeffery. In recognition of these increased responsibilities, Mr. Seeley was appointed executive vice-president, operations, effective September 1, 1976.

On the same date, three further executive appointments went into effect: Michael Cebrowski became vice-president, mill operations; Morris R. McKay, vice-president, woodlands operations and Robert E. Chambers, vice-president, engineering and services. These appointments recognize the need to provide a broader organizational structure for our expanded operations.

Our appreciation is extended to all employees who have worked hard to overcome the difficulties we faced during the year. We look forward to their continued support in all activities associated with the expansion of our operations.

On behalf of the directors,
CHARLES J. CARTER, *president*

Thunder Bay, Ontario,
February 21, 1977.



This painting shows both our bleached kraft pulp mills as they looked in November 1976. The taller buildings belong to the new mill which has one quarter more capacity than the first mill. The tall narrow building houses the digester for the new mill. The shorter

square structure in front of the digester encloses the diffuser which is illustrated in the diagram on the inside back cover. The salt recovery system is located in the dark blue building at the extreme right.

1976 Results in Detail

EARNINGS DOWN—SALES AT NEW HIGH

Net earnings were \$4.9 million or \$1.35 a share in 1976 compared with \$6.4 million or \$1.78 a share in 1975. The drop in earnings resulted from three main causes: the discount on the U.S. dollar in 1976 versus a premium in the previous year, serious cost inflation in all areas of our operations including labor, energy, supplies and transportation and the fact that prices did not keep pace with rising costs. Earnings for both years were affected by a six-month strike of mill workers that ended February 23, 1976.

Shipments Up

Shipments reflected the detrimental effects of the strike which lasted two months in 1976 versus four months in 1975. Newsprint shipments totaled 328,160 tons in 1976 compared with 266,949 tons in 1975 and chemical pulp shipments were 129,503 tons versus 110,235 tons in 1975. Stud lumber shipments were 45.2 million board feet in 1976 compared with 32.4 million board feet in 1975. Shipments of waferboard, which commenced late in the second quarter of 1975, were 48 million square feet ($\frac{3}{8}$ -inch basis) versus 13.7 million square feet in 1975.

Record Net Sales

Net sales of \$136.3 million were up 28.8 percent over \$105.8 million in 1975 setting a new high. Newsprint and pulp net sales were \$124.4 million in 1976 compared with \$100.5 million in 1975 and building products net sales were \$11.9 million versus \$5.3 million in 1975.

Increased shipments discussed in the above section and higher prices for newsprint were responsible for the increase in net sales. Our newsprint price was increased \$25 per ton on March 16, 1976 and a further increase of \$20 per ton went into effect on December 1. Shipments of chemical pulp remained strong, although prices did not advance during the year due to generally weak markets. The demand for our stud lumber was firm in 1976 and prices for this product maintained reasonable strength throughout the year. The waferboard market, however, was generally weak resulting in curtailed production and depressed prices during 1976.

Since the major portion of our sales is in the United States, the U.S.-Canadian dollar exchange rate has an important bearing on our results. In 1976 we incurred an average discount on our U.S. dollar sales of slightly over one percent compared with a premium of about two percent in 1975.

Expansion Program Completed

Capital expenditures of \$72.4 million in 1976 were spent almost entirely on the expansion program.

In November 1976, the new 250,000 ton-per-year bleached kraft pulp mill, which is integrated with the existing 200,000 ton mill, commenced start-up operations bringing to completion the major



expansion and diversification program that began in 1973.

Total cost of the undertaking was \$191 million, about \$13 million higher than we estimated in last year's annual report. One of the reasons for the increase was the cost of additional bank financing to help offset the loss of cash flow resulting from the prolonged strike. Other factors included general cost inflation and difficulty in obtaining labor in certain key trades.

The new kraft pulp mill commenced trial production runs on November 19 and by year end we had shipped some 3,500 tons of unbleached pulp and 6,600 tons of fully-bleached pulp. This initial production was sold as start-up pulp and was not included with the year's results as explained in Note 3 to financial statements.

Although we encountered a number of minor setbacks which are normal

during a breaking-in period, the start-up was considered successful. By mid-February 1977, we had made satisfactory progress in both production volume and quality.

As part of the expansion and diversification program we also expanded our stud lumber capacity and constructed a waferboard-particleboard plant. In woodlands too, there was considerable expansion of roads, camps and harvesting facilities to provide for the increased volume of wood required by the expanded mill operations.

Working Capital Deficiency and New Financing

During 1976 our working capital deficiency increased from \$16.3 million to \$48.5 million due in large measure to the extensive use of short-term bank borrowing to

finance our major capital program. Our short-term bank indebtedness amounted to \$72.7 million at December 31, 1976.

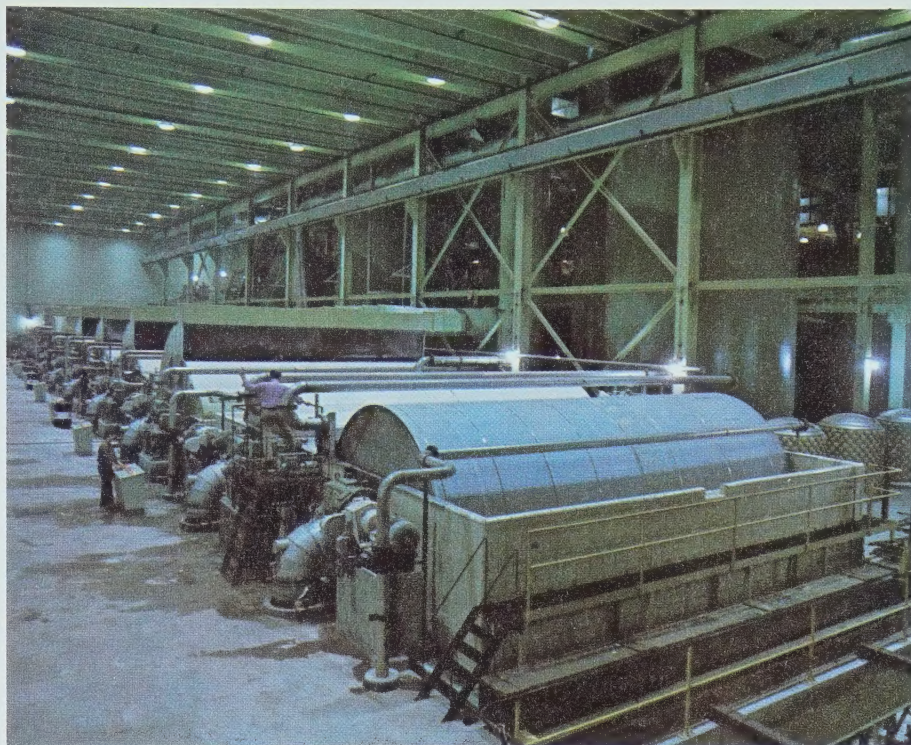
On February 18, 1977 we signed an agreement to issue \$20 million (U.S. funds) of unsecured debentures in the Eurodollar market bearing interest of 8¾ percent and maturing in 1984. In addition, we have arranged for \$30 million (U.S. funds) of term financing with our bankers. This debt will mature in 1979 with the interest rate to be determined when the funds are drawn down. The proceeds of these new financings will be used to reduce short-term bank indebtedness and, hence, improve our working capital position.

Long-Term Debt

In 1976 we drew down \$27 million, the remaining amount available under the \$40 million term financing agreement with Canadian

A continuous sheet of bleached kraft pulp is formed at the wet end of our new pulp drying machine, shown at left, from a mixture of pulp and water. Sufficient water is removed to enable the pulp sheet to be self-supporting as it moves on through the drying process. The dried pulp is cut, stacked in bales and wrapped before being shipped to our customers.

The five-stage bleach plant, at right, converts the raw, brown pulp from the digester to fully-bleached kraft pulp to meet the demands of our customers.



Pacific Securities Limited, a wholly-owned subsidiary of our majority shareholder, Canadian Pacific Investments Limited.

The long-term debt balance on December 31, 1976, after deducting the amount due in 1977, was \$87.4 million. Details are shown in the Consolidated Balance Sheet on page 17.

New financing has been arranged since the end of 1976, as described in the preceding section.

Taxes Deferred

Because of the heavy outlay for capital expenditures on our construction program, much of which is eligible for accelerated rates of write-off for tax purposes, we were able to effect a significant cash flow benefit by deferring taxes for 1976. Explanation of our policy on

deferred income taxes is given in the Notes to Consolidated Financial Statements on page 18.

Current Value Accounting

In line with generally accepted accounting principles, our financial statements reflect historical dollar values. Due to unprecedented inflation in recent years, there has been much discussion of the merit and methods of converting historic values to current values by application of either a general price level indicator or a replacement value appraisal. To date, Canadian accounting practice does not reflect general acceptance of either the principle or the method of reporting any form of current value accounting. However, in anticipation of future requirements for such information we are participating with other companies in a study of replacement value accounting for our industry. Once an acceptable

practice emerges in Canada we will be in a position to report accordingly.

Protecting the Environment

We continue to improve and update our environmental control systems to reduce the effects of any pollution that results from our industrial processes.

The latest advancement in this program is the inclusion of the closed cycle concept in the design for the new kraft pulp mill. This system will be completed once the salt recovery process, an important aspect of the closed cycle concept, goes into operation early in 1977.

The new system, explained in the foldout at the back of this report, is designed to permit all streams containing contaminants to be reused

within the manufacturing process and virtually to eliminate the need for separate water pollution control facilities. The recycling system will also enable us to use considerably less process water. Once the system is operating successfully, we will consider extending it to our first kraft mill.

We continue to press ahead with our environmental protection program in close co-operation with both federal and provincial environmental authorities. It is our objective to meet current and foreseeable regulations governing effluent, air emissions, noise level and disposal of solid wastes.

Energy

Several years ago, when it appeared that a crisis would develop in the availability and cost of energy, we launched a program to make greater use of waste materials, as well as to increase our electric power generation facilities. As predicted, energy rates have soared in recent years. For example, rates for electric power from the government-owned Ontario Hydro increased by 85 percent from 1974 to 1977.

The new kraft pulp mill is virtually self-sufficient in energy, using bark and other wastes for its combustion needs and producing electrical

energy from a new turbine generator, the fifth such installation in our mill complex. With the completion of our expansion program, about half of our total energy requirements can be met by waste fuels and on-site electric power generation.

Woodlands Operations

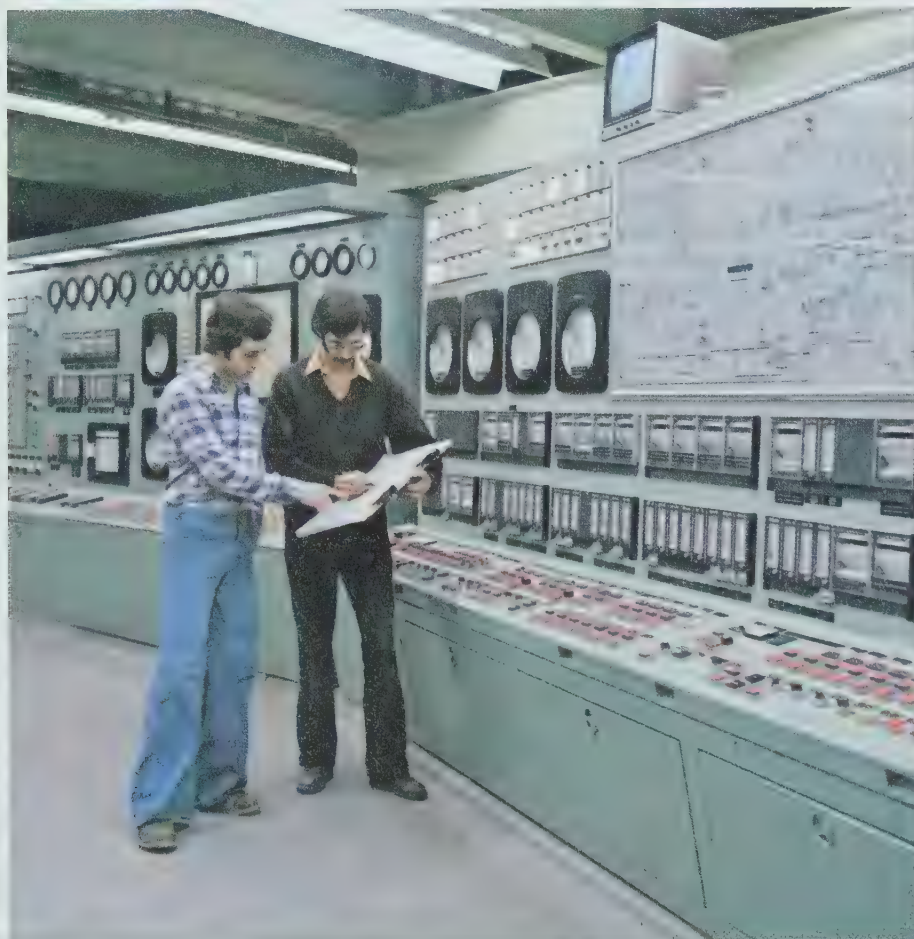
Our woodlands field operating organization has been preparing itself for expanded operations. Three new camps have been constructed and one of these went into production in 1976. The remaining two will begin operation during the first half of 1977. We were able to maintain our woodlands work force at an adequate level in 1976 and carried out training programs designed to improve the skills of our workers and train new employees.

The access road from Sioux Lookout to Savant Lake, built under a cost-sharing arrangement with the Ontario government, is now open for travel. The new road considerably shortens the travel distance between these two communities and makes the established community of Sioux Lookout a potential living area for our workers.

In 1976 we continued to study and improve the logistics required to maintain steady deliveries of wood in sufficient quantities and appropriate species to meet the needs of our expanded mill operations. Our wood supply originates from a number of different harvesting locations throughout our woodlands areas and from local suppliers. We also purchase wood fibre from sawmills in the area in the form of wood chips. The wood from all these sources must move in an orderly flow to meet mill production needs and to permit inventories at the mill, railhead spur locations and harvesting sites to be maintained at appropriate levels. The entire system requires careful monitoring of harvesting and delivery which begins with the original planning of cutting areas and ends with delivery to the mill.

An important aspect of our woodlands operation is the continuing mechanization program to increase productivity and improve working conditions for employees. This program has been expanded over the past few years in line with the mill expansion and we continue to research new methods and systems intended to increase the efficiency of our operation. We also work with equipment suppliers in the development of newer technology as discussed on page 11.

The Kamyr continuous digester in the new kraft mill, opposite, is capable of producing some 800 tons a day of raw, unbleached kraft pulp in a process known as cooking. The cooking cycle for both mills is controlled and monitored in the control room shown below. Similar facilities are located in other sections of the mill.



Managing Our Forest Resources

The forest areas outlined on page 13, which provide the major portion of our fibre requirements, are licensed to us for the harvesting of trees for pulpwood and sawlog production. Over the years, we have managed these woodlands on a co-operative basis with the Province of Ontario carrying out forest inventory, forest protection and regeneration of cutover areas. In 1962, the Ontario government assumed full responsibility for forest management of Crown lands in the province under the Crown Timber Act and in 1966 our participation in forest management was formalized in a co-operative regeneration agreement with the Province. Since 1974, however, the Ontario government has taken over the entire program and administered regeneration on its own.

Despite considerable progress we believe the regeneration program could be improved. With the need to achieve higher wood production every effort should be made to intensify forest management programs. The Ontario government is well aware of this need and we are

working with them in studies to determine the best means of accomplishing such objectives.

The 1976 fire season was the worst in 40 years in Ontario. Three large forest fires occurred in the western area of our woodlands, near Valora and Savant Lake, resulting in a substantial loss of both mature timber and young second-growth stands. The drought condition which precipitated these conflagrations is still with us and every precaution is being taken to ensure that our fire prevention, detection and suppression capabilities are at a high level of efficiency for the 1977 season.

During 1976, we also started a re-inventory of our timber resources under a joint working arrangement with the Ministry of Natural Resources. This is intended as a three-year program to provide an up-dated picture of the location, age, species, quality and volume of timber on all our forest areas and will form the basis for more effective planning and decision-making in the management of these lands.

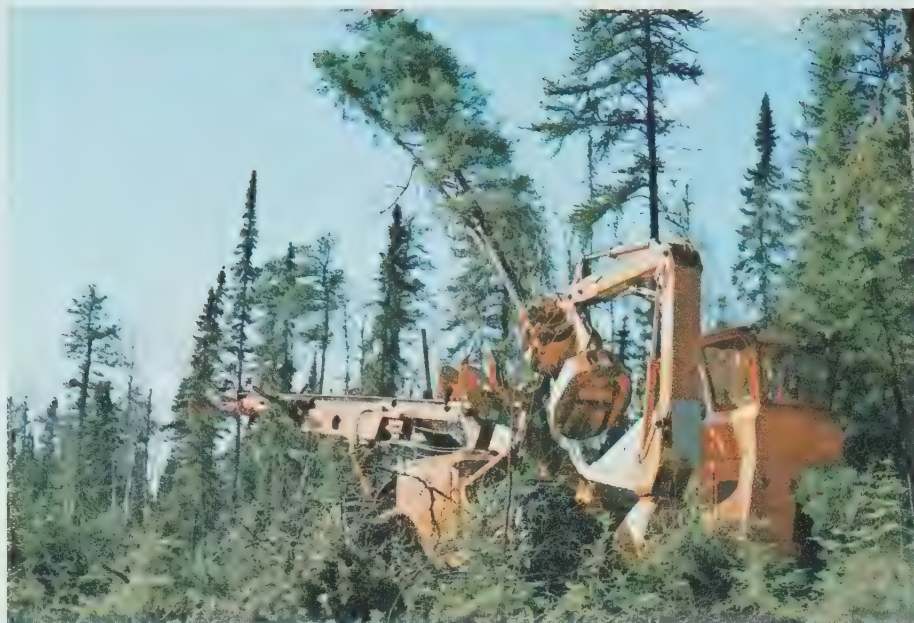
Labor Agreements

Agreements were signed in 1976 with all unions representing our employees. The agreement with

mill employees was reached in February, following an unprecedented six-month strike by members of the Canadian Paperworkers Union. All contracts were approved by the Anti-Inflation Board after a minor wage adjustment in the first year of the mill employees' contracts. The mill and office workers' agreements will remain in effect until April 30, 1978 and the woodlands agreement until August 31, 1978.

Market Outlook

U.S. consumption of newsprint in 1976 of 9.6 million tons showed an increase of 5.1 percent over 1975 but was well below the peak years from 1972 to 1974. The gradual economic improvement in the U.S. is expected to continue, aided by the announced intention of the U.S. government to stimulate the economy, although recent severe winter conditions have caused some setbacks in this recovery. Dr. Jon G. Udell, a foremost U.S. newsprint supply analyst, predicts that U.S. newsprint consumption should advance to about ten million tons in 1977 assuming an approximate five percent real economic growth during the year.



We continue to assist in the development of new woodlands production equipment designed to increase productivity and improve working conditions for our operating employees.

One of our current efforts in this regard is a co-operative project with a major Canadian equipment supplier to refine and evaluate a new concept in tree harvesting. The prototype shown here is operated by one man in a climate-controlled cab. The machine shears and holds several trees, removes limbs, accumulates a 14-ton load and delivers it to roadside to await further processing and delivery to the mill.



As we look ahead there is every reason to believe that U.S. newsprint demand will gain strength with the anticipated improvement in the U.S. economy over the long term and that Canadian producers will remain major suppliers to this market.

The weak market for bleached kraft pulp that prevailed during 1976 is expected to continue in early 1977. We anticipate, however, that this situation will improve in the latter part of the year with the expected improvement in the U.S. economy. Looking to the future, we expect growth in demand for wood fibre and we believe the outlook for bleached kraft pulp is favorable.

Housing starts in North America are expected to increase in 1977 over 1976 with continued emphasis on single-family units for which stud lumber is used extensively. As a result, we expect continued strength in the market for stud lumber in 1977. Similarly, the market for waferboard is expected to improve during 1977 with resulting increases in prices over the depressed prices in 1976. Our capability to produce particleboard for the furniture and cabinetmaking industries will enable us to take advantage of this market should demand warrant it.

Company Outlook

With the expectation of modest growth in demand for our products

and our increased ability to satisfy this demand from our newly expanded facilities, we are optimistic about our earnings prospect for 1977. We have efficient, modern facilities from the harvesting of wood to the finishing, packaging and shipping of our products that place us in a most favorable position to take full advantage of the marketing opportunities open to us.

The wage rates of our workers, however, are now higher than their U.S. counterparts and we have no choice other than to intensify our continuing efforts to up-date and mechanize all our operations. While such action enables us to improve productivity, there is little we can do about other factors, such as the U.S. dollar exchange rate and the future course of taxes and other government charges. Stumpage dues, for example, doubled in 1974. Increases of such magnitude add a considerable burden to operating costs and undermine the competitive position of our industry in world markets.

As we look ahead, we are optimistic that the future prospects for our markets are encouraging and will be reflected in improved earnings levels. There are, of course, uncertainties ahead but we believe we can look forward to substantial progress for our enterprise over the longer term.



This map shows our company's 14,485 square miles of forest area, which are managed on a sustained-yield basis under long-term leases from the Ontario Government. To open and harvest these resources we have built the camps shown on

the map, as well as some 1,525 miles of all-weather roads. These roads link the woods operation with highways and rail lines which are used to deliver wood to our mill in Thunder Bay.

GLOSSARY OF TERMS

NET SALES: The Canadian dollar proceeds from the sale of products after deducting costs of delivery to customers.

OPERATING PROFIT: Profit realized from manufacture and sale of products after deducting all costs except interest charges, depreciation and income taxes. Applies to operations only; does not include investment or other income.

DEPRECIATION: The distribution on a yearly basis of the original cost of a fixed asset (defined below) over its estimated useful life, which is written off as a deduction from earnings.

NET EARNINGS: Total income less all costs; the net amount available from the year's operations to pay dividends or retain for use in the business.

CASH FLOW: Total funds generated by operations in a year. In our case, cash flow includes net earnings and charges not affecting working capital; principally depreciation and deferred income taxes.

RETAINED EARNINGS: Accumulated total of annual net earnings since the start of the company (1936) less dividends to shareholders during the same period.

CURRENT ASSETS: Assets which, in the normal course, will be converted into cash or consumed in operations within the following year.

FIXED ASSETS: Assets, such as land, buildings and machinery, held for long-term use rather than for sale or consumption in operations.

CURRENT LIABILITIES: Amounts owed (including a portion of long-term debt) due for payment within one year.

LONG-TERM DEBT: Amounts borrowed for a term of longer than one year.

SINKING FUND: Amounts paid to independent trustees of our bond issues, as stipulated in the trust deeds of these issues, to provide annual instalments for their redemption.

WORKING CAPITAL: Amount by which current assets exceed current liabilities, both as defined above. This is a measure of working or operating resources.

BALANCE SHEET: Statement of financial position at a year end showing what is owned (assets of all kinds) versus what is owed (liabilities of all kinds) and shareholders' equity; set forth in accordance with The Business Corporations Act (Ontario). The word "Consolidated" means that all subsidiaries are included to show position of the enterprise as a whole.

SHAREHOLDERS' EQUITY: Value of the shareholders' ownership or interest in the company. Consists of share capital plus retained earnings and is the amount by which assets exceed liabilities.

AUDITORS' REPORT TO THE SHAREHOLDERS

To the Shareholders of The Great Lakes Paper Company, Limited

We have examined the consolidated balance sheet of The Great Lakes Paper Company, Limited as at December 31, 1976 and the consolidated statements of earnings, retained earnings and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these consolidated financial statements present fairly the financial position of the company as at December 31, 1976 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Toronto, Ontario, February 2, 1977
except for Note 13 which
is dated February 17, 1977

THORNE RIDDELL & CO.
Chartered Accountants

EARNINGS

consolidated statement for years ended December 31 (thousands of dollars)

	1976	1975
Net sales: pulp and paper.....	\$124,371	\$100,508
building products.....	11,943	5,259
	136,314	105,767
Cost of sales.....	110,769	78,509
Selling and administrative expense.....	3,389	2,764
OPERATING PROFIT.....	22,156	24,494
Other income.....	222	59
	22,378	24,553
Interest (Note 9).....	3,979	2,764
Bond issue discount and expense.....	—	812
Depreciation.....	9,635	9,162
EARNINGS before income taxes.....	8,764	11,815
Income taxes.....	3,897	5,388
NET EARNINGS for year.....	<u>\$ 4,867</u>	<u>\$ 6,427</u>
Net earnings per share (Note 7).....	\$ 1.35	\$ 1.78

RETAINED EARNINGS

consolidated statement for years ended December 31 (thousands of dollars)

Retained earnings at beginning of year.....	\$ 57,004	\$ 50,577
Net earnings for year.....	4,867	6,427
RETAINED EARNINGS at end of year.....	<u>\$ 61,871</u>	<u>\$ 57,004</u>

BALANCE SHEET

consolidated statement at December 31 (thousands of dollars)

Assets	1976	1975
CURRENT ASSETS		
Accounts receivable.....	\$ 26,082	\$ 2,055
Income taxes recoverable.....	402	2,706
Inventories:		
Finished goods	1,219	404
Pulpwood and sawlogs	17,562	16,142
Materials and supplies	9,512	8,583
Prepaid expenses	271	295
	<u>55,048</u>	<u>30,185</u>
FIXED ASSETS (Note 2).....	356,391	284,242
Accumulated depreciation and depletion	118,813	109,381
	<u>237,578</u>	<u>174,861</u>
	<u>\$292,626</u>	<u>\$205,046</u>

Approved by the Board:

C. J. CARTER, *Director*

R. G. MEECH, *Director*

Liabilities	1976	1975
CURRENT LIABILITIES		
Bank indebtedness (Note 5)	\$ 72,655	\$ 27,138
Accounts payable and accrued charges	22,072	16,887
Sundry taxes payable.....	4,173	1,866
Current portion of long-term debt	4,630	590
	<u>103,530</u>	<u>46,481</u>
LONG-TERM DEBT (Note 6)		
First Mortgage Bonds		
8% sinking fund bonds, Series B, maturing 1989	17,060	17,650
11¼% sinking fund bonds, Series C, maturing 1995	35,000	35,000
Term loan	40,000	13,000
	<u>92,060</u>	<u>65,650</u>
Portion due within one year	4,630	590
	<u>87,430</u>	<u>65,060</u>
DEFERRED INCOME TAXES	37,045	33,751
	<u>37,045</u>	<u>33,751</u>
Shareholders' Equity		
Common shares without par value (Note 7)		
Authorized 4,500,000 shares		
Issued 3,610,029 shares.....	2,750	2,750
Retained earnings	61,871	57,004
	<u>64,621</u>	<u>59,754</u>
	<u>\$292,626</u>	<u>\$205,046</u>

CHANGES IN FINANCIAL POSITION

consolidated statement for years ended December 31 (thousands of dollars)

	1976	1975
WORKING CAPITAL PROVIDED BY		
Net earnings	\$ 4,867	\$ 6,427
Charges not affecting working capital		
Depreciation	9,635	9,162
Increase in deferred income taxes	3,294	7,447
Bond issue discount and expense	—	812
GENERATED FROM OPERATIONS.....	17,796	23,848
Proceeds from issue of		
First Mortgage Sinking Fund Bonds, Series C	—	34,188
Term loan.....	27,000	—
Sale of fixed assets.....	47	72
	44,843	58,108
WORKING CAPITAL USED FOR		
Expenditures on fixed assets	72,399	76,540
Reduction of long-term debt.....	4,630	590
	77,029	77,130
DECREASE IN WORKING CAPITAL	32,186	19,022
WORKING CAPITAL (DEFICIENCY) at beginning of year	(16,296)	2,726
WORKING CAPITAL (DEFICIENCY) at end of year	<u><u>\$(48,482)</u></u>	<u><u>\$(16,296)</u></u>

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS Year ended December 31, 1976

1. Summary of Significant Accounting Policies

PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the financial position and results of operations of The Great Lakes Paper Company, Limited and all its subsidiary companies.

FOREIGN EXCHANGE

Current assets and current liabilities in foreign currencies are translated into Canadian dollars at current rates of exchange at the date of the balance sheet. Fixed assets and items affecting earnings are converted at rates of exchange in effect at the dates of the transactions.

INVENTORIES

Inventories are valued at average cost which is less than net realizable value.

FIXED ASSETS AND DEPRECIATION

Fixed assets are recorded at cost. The cost and related accumulated depreciation of items disposed of are removed from the accounts and any gain or loss is included in earnings. Depreciation is based on the estimated economic lives of the assets, using the following methods and composite rates of depreciation:

Buildings and Machinery	
Pulp and paper	4½% straight line
Building products	10% straight line
Woodlands improvements and equipment	30% diminishing balance

No depreciation is charged on major improvements or expansions until construction has been completed.

DEFERRED INCOME TAXES

Income taxes are charged against earnings based on the items included within the determination of those earnings

irrespective of any timing difference for the recognition of certain items under current tax legislation. The excess of the income taxes charged to earnings over the amount actually payable in any year is set aside as deferred income taxes to be drawn upon in future years when tax payments exceed the amount charged to earnings.

INTEREST

Interest on debt incurred to finance major expansion programs, less any interest earned on the temporary investment of the proceeds, is capitalized during the construction period.

FULLY DILUTED EARNINGS PER SHARE

Fully diluted earnings per share are determined on the assumption that warrants and options outstanding at the end of the year were exercised at the beginning of the year and the funds therefrom invested to produce a return at the average interest rate for 90-day bank certificates of deposit.

2. Fixed Assets (thousands of dollars)

	December 31, 1976		December 31, 1975
	Cost	Net Value	Net Value
Land	\$ 482	\$ 482	\$ 476
Buildings and machinery			
Pulp and paper	307,803	210,559	53,947
Building products	23,549	18,856	20,904
Woodlands improvements and equipment	20,612	7,681	4,074
Timber licences	3,945	—	—
Construction in progress	—	—	95,460
	<u><u>\$356,391</u></u>	<u><u>\$237,578</u></u>	<u><u>\$174,861</u></u>

3. Expansion Program

The company's new kraft pulp mill, which is the major component of the expansion program, commenced trial production runs in November 1976. The period from this date to December 31, 1976, during which time the various areas of the mill were being completed by the construction forces and run in by operating crews, has been treated as part of the construction period and, accordingly, the operating loss has been capitalized. For financial reporting purposes construction has been regarded as completed on December 31, 1976. In accordance with the company's accounting policy, interest on debt incurred to finance the construction has been capitalized to December 31, 1976, and no depreciation has been charged against earnings.

4. Lease Commitments

The company has signed leases (with options to purchase) covering certain portable camp buildings and mobile equipment for terms of three to 11 years. The payments under these leases amounted to \$3.2 million in 1976. Based on leases in effect at December 31, 1976 payments over the next five years will amount to approximately \$3 million in each of the years 1977 and 1978, and \$2 million in each of the years 1979, 1980 and 1981. In addition, under a 1974 agreement, the company has \$7.6 million of lease financing available for the acquisition of woodlands camp buildings and mobile equipment over the next two years. The terms of these leases will be similar to those described above.

5. Bank Indebtedness

The bank indebtedness is partially secured by an assignment of accounts receivable and charges on inventory.

6. Long-Term Debt

The Term loan, which bears a floating rate of interest, is payable to Canadian Pacific Securities Limited, a wholly-owned subsidiary of Canadian Pacific Investments Limited, the majority shareholder in the company.

Payments required to meet sinking fund provisions of the First Mortgage Bonds and the Term loan over the next five years approximate \$4.6 million in 1977, \$9.3 million in 1978, \$9.4 million in 1979, \$9.5 million in 1980 and \$9.7 million in 1981.

7. Warrants and Options

Common shares were reserved at December 31, 1976 for the following:

- (a) 200,000 shares for the common share purchase warrants which accompanied the First Mortgage Sinking Fund Bonds, Series B. The warrants are exercisable at \$33.00 per share until July 1, 1979.
- (b) 100,000 shares for a purchase option granted to Canadian Pacific Investments Limited. The option is exercisable at \$24.00 per share until January 1, 1982. Both the number of shares and the price per share are subject to adjustment in the event additional shares are issued, other than pursuant to the warrants described above, or other changes in the company's capital structure.

Exercise of the above warrants and options would not have resulted in any dilution of the 1976 net earnings per share.

8. Dividend Restrictions

The trust deeds securing the First Mortgage Bonds contain dividend restrictions. The most restrictive of these requires that, after any dividend is declared, working capital (which for these purposes is before the deduction of the current portion of long-term debt) must be over \$10 million and shareholders' equity must be over \$50 million.

A further dividend restriction is imposed by the Federal Anti-Inflation Legislation described in note 12.

9. Interest

Interest for the year amounted to \$9.5 million (\$6.8 million in 1975) on long-term debt and \$4.5 million (\$103,000 in 1975) on bank indebtedness. Of these amounts, \$10 million (\$4.1 million in 1975) has been capitalized as described in note 3.

10. Executive Remuneration

In 1976, directors' fees amounted to \$48,000. The total remuneration, including directors' fees, received by the directors and senior officers amounted to \$483,000.

11. Past Service Pension Costs

Past service pension costs, resulting from retroactive increases in benefits in prior years, are being funded and charged to earnings in equal annual instalments to 1989. Based on recent actuarial reports, the unfunded amount was \$3.2 million at December 31, 1976.

12. Federal Anti-Inflation Legislation

The company is subject to the Anti-Inflation Act which provides for the restraint of profit margins on domestic sales and compensation until December 31, 1978. To the best of the company's knowledge, it has complied with the provisions of this Act.

The Act also provides for limitations on the amount of dividends which may be declared during this period. The impact of these limitations on the company can only be determined at the time of declaration of a dividend.

13. Subsequent Events

Subsequent to December 31, 1976 the company has undertaken a refinancing plan, the proceeds of which will be applied to reduce the existing short-term bank indebtedness. The plan comprises the following:

- (a) On February 17, 1977 the company approved the terms of an agreement providing for the subscription by a European banking syndicate for \$20 million (U.S. funds) of 8¾ percent debentures due 1984 to be issued by the company.
- (b) On February 17, 1977, the company approved arrangements with its bankers under which the company will borrow \$30 million (U.S. funds) for a term of two years with the interest rate to be determined when the funds are drawn down.

NEWSPRINT PAPER

The United States is Canada's principal customer for newsprint and accounts for over 40 percent of the free-world's consumption. The following table, based on reports issued by Canadian Pulp and Paper Association (CPPA), indicates the size and growth of newsprint markets over the period 1967 through 1976. World totals in newsprint omit communist countries for which reliable information is lacking.

	1967	1968	1969	1970	1971	1972	1973	*1974	1975	1976
	(millions of tons)									
Free-world production capacity.....	20.4	21.5	22.4	23.3	23.7	24.1	24.5	24.0	24.4	25.0
Free-world production.....	18.1	18.9	20.6	21.1	20.7	21.5	22.3	22.5	20.1	23.5
Canadian production capacity	9.3	9.7	9.7	9.8	10.2	10.3	10.3	10.0	10.2	10.1
Canadian production	8.1	8.0	8.8	8.7	8.5	8.8	9.1	9.5	7.7	8.9
Canadian exports.....	7.3	7.4	8.1	8.0	7.6	8.1	8.3	8.7	6.9	7.8
Canadian exports to U.S.	6.3	6.1	6.4	6.2	6.1	6.4	6.9	6.9	5.5	6.3
Total U.S. consumption.....	9.2	9.3	9.9	9.7	9.8	10.5	10.8	10.2	9.1	9.6

Source: American Newspaper Publishers Assoc. and CPPA (1976 estimated)

*Tonnage from 1974 on reflects the change in basis weight from 32 to 30 pounds that occurred generally throughout the newsprint industry in North America.

BLEACHED KRAFT PULP

Bleached kraft pulp is included in the general commodity classification of paper grade chemical pulp. North America and Scandinavia are the major suppliers of paper grade chemical pulp, having a production capacity in 1976 of approximately 67.1 million tons or 70 percent of the world's total production capacity. The bulk of the pulp produced by these countries is captive production for use by the producers or affiliated companies. The balance, known as market pulp, is available for sale on the open market. Most of this market pulp consists of bleached kraft pulp. In 1976 the production capacity in North America and Scandinavia for market bleached kraft pulp was approximately 13.7 million tons of which Canadian production capacity amounted to approximately 45 percent, or 6.1 million tons.

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
	(millions of tons)									
Paper Grade Chemical Pulp										
North American and Scandinavian production.....	43.8	47.2	50.8	52.2	51.5	55.1	58.8	59.7	51.6	58.7
Bleached Kraft Pulp										
North American and Scandinavian production.....	16.9	19.1	21.1	22.5	22.7	24.4	26.6	27.6	24.4	27.8
Bleached Kraft Market Pulp										
Total demand for North American and Scandinavian production	6.2	7.6	9.0	9.6	8.4	10.4	11.5	11.7	9.4	10.9
Canadian shipments.....	2.4	3.0	3.7	3.7	3.7	4.4	4.9	5.3	4.0	4.9
Canadian exports to U.S.	1.2	1.3	1.7	1.5	1.5	1.8	1.9	2.0	1.5	1.9
Total U.S. supply (including imports)	2.2	2.5	3.1	2.7	2.8	3.6	3.6	3.6	2.8	3.5

Source: CPPA (1976 estimated).

LUMBER

Residential construction provides the principal use for softwood lumber produced in Canada and the U.S., a substantial portion of which is stud lumber. The following table indicates the level of housing construction and the sources of softwood lumber production in North America over the past ten years.

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
						(millions)				
North American housing starts.....	1.5	1.7	1.7	1.6	2.3	2.6	2.3	1.6	1.4	1.8
Seasonally adjusted year-end rate of North American housing starts	1.5	1.8	1.6	2.1	2.6	2.6	1.7	1.0	1.6	2.2
Softwood lumber production						(billions FBM)				
U.S.	27.1	28.9	28.3	27.4	29.7	31.4	31.3	28.0	26.0	29.7
British Columbia	7.1	7.8	7.7	7.7	8.9	9.5	10.3	8.8	7.2	10.5
Rest of Canada.....	2.6	3.0	3.3	3.1	3.3	3.9	4.9	4.3	3.5	4.3
Total.....	36.8	39.7	39.3	38.2	41.9	44.8	46.5	41.1	36.7	44.5

Sources are: Statistics Canada, U.S. Bureau of Census, National Assn. of Home Builders (U.S.), Western Wood Products Assn. and Southern Forest Assn., National Forest Products Assn. (1976 estimated).

BOARD

Waferboard is a relatively new construction board produced primarily in Canada. It competes in its uses with the exterior grades of softwood plywood sheathing which represent approximately 50 percent of all softwood plywood production. Statistics are not available for periods prior to 1973.

Particleboard is an established interior grade of board used primarily in the furniture and cabinet-making industry. Canada's consumption of this product has grown at a rate of 15 percent per year over the last ten years. This growth has been supplied increasingly by imports from the U.S.

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
						(billions of square feet)				
Softwood plywood (3/4-inch basis)										
U.S. production.....	12.5	14.0	13.5	13.8	15.8	17.8	18.3	17.1	16.0	18.4
Canada production.....	1.3	1.5	1.5	1.5	1.8	2.0	2.1	2.1	2.0	2.4
Waferboard (3/4-inch basis)										
Canada production1	.1	.2	.4
Particleboard (3/4-inch basis)										
U.S. production.....	1.1	1.4	1.7	1.8	2.4	3.3	3.9	3.5	3.5	3.5
Canada production.....	.1	.1	.1	.1	.2	.2	.2	.2	.2	.3

Source: Dept. of Industry, Trade and Commerce. American Plywood Assoc. (1976 estimated).

OUR SHIPMENT SUMMARY: LAST TEN YEARS

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
						(thousands of tons)				
Newsprint.....	362	315	351	335	341	339	414	347	267	328
Chemical pulp.....	131	157	168	185	166	166	186	177	110	130
Total.....	493	472	519	520	507	505	600	524	377	458
Stud lumber (millions of board feet)							5.0	31.6	32.4	45.2
Waferboard (millions of sq. ft.—3/4-inch thickness).....									13.7	48.0

While waferboard is manufactured in varying thicknesses, for comparative purposes with the industry statistics above our shipment volume is shown here on a 3/4-inch equivalent basis.

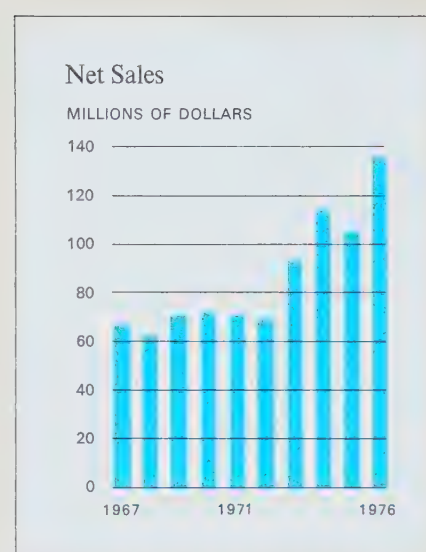
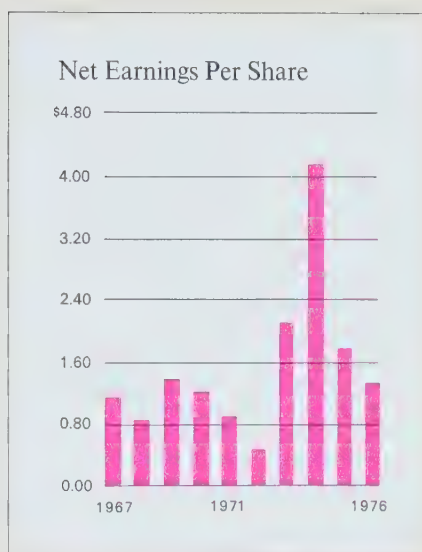
FINANCIAL SUMMARY: LAST TEN YEARS

Except as indicated, dollars are in thousands
with 000 omitted

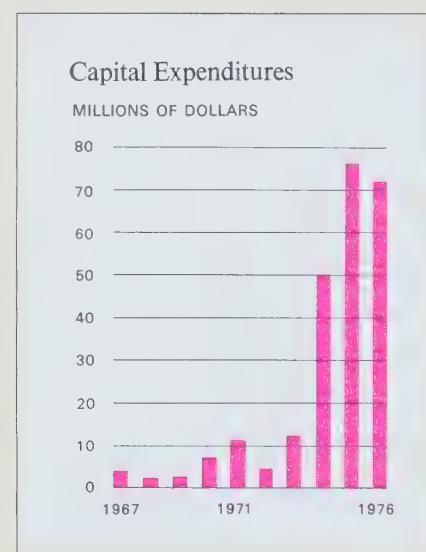
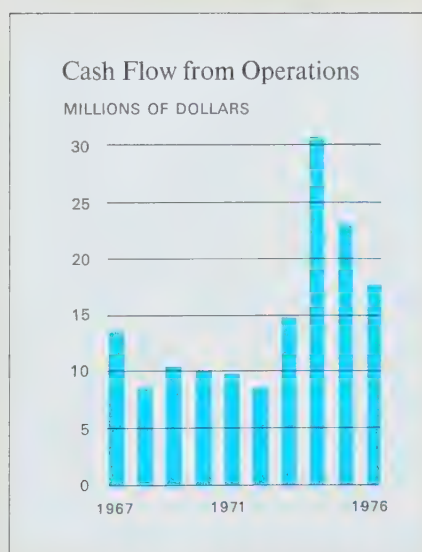
	1976	1975	1974	1973	1972	1971	1970
SALES & EARNINGS							
Net sales: pulp and paper	124,371	100,508	110,977	92,237	69,433	71,010	71,822
building products	11,943	5,259	3,465	584	—	—	—
total	136,314	105,767	114,442	92,821	69,433	71,010	71,822
Operating profit	22,156	24,494	35,441	21,360	10,892	13,446	15,728
Interest expense	3,979	2,764	1,733	1,859	2,043	2,306	2,537
Depreciation	9,635	9,162	7,267	6,454	6,085	5,843	5,873
Earnings before income taxes	8,764	11,815	26,625	13,161	2,927	5,747	8,820
Income taxes	3,897	5,388	11,687	5,540	1,319	2,510	4,475
Net earnings	4,867	6,427	14,938	7,621	1,608	3,237	4,345
Net earnings per share	1.35	1.78	4.14	2.11	0.45	0.90	1.21
Dividends declared, total amount	—	—	—	—	1,081	2,342	3,603
Dividends per share; in cents	—	—	—	—	30	65	100
ASSETS & LIABILITIES							
Current assets	55,048	30,185	27,692	30,191	24,940	25,535	33,324
Current liabilities	103,530	46,481	24,966	16,001	11,790	13,124	12,718
Ratio of above assets to liabilities	.5	.6	1.1	1.9	2.1	1.9	2.6
Working capital (deficiency)	(48,482)	(16,296)	2,726	14,190	13,150	12,411	20,606
Inventories, described in balance sheet	28,293	25,129	15,761	10,874	10,260	9,753	9,279
Fixed assets, see notes to financial statements	356,391	284,242	207,999	158,378	147,718	143,808	132,877
Accumulated depreciation and depletion	118,813	109,381	100,444	93,423	87,892	82,242	76,630
Long-term debt	87,430	65,060	30,650	23,025	25,430	27,766	32,167
Above debt as percentage of capitalization	57.5	52.1	36.5	37.5	45.4	48.0	52.5
Deferred income taxes	37,045	33,751	26,304	17,731	16,963	16,155	15,525
Retained earnings, at year end	61,871	57,004	50,577	35,639	28,018	27,491	26,596
EQUITY & OTHER DATA							
Common shares outstanding, at year end	3,610,029	3,610,029	3,610,029	3,610,029	3,602,603	3,602,603	3,602,603
Number of shareholders	3,116	3,529	3,745	4,035	4,470	4,919	5,209
Percentage of shares held in Canada	97.6	96.9	96.9	97.0	96.0	95.5	95.3
Shareholders' equity, total	64,621	59,754	53,327	38,389	30,583	30,056	29,161
Shareholders' equity per share	17.90	16.55	14.77	10.63	8.49	8.34	8.09
Cash flow from operations	17,796	23,848	30,778	14,843	8,501	9,710	9,963
Cash flow per share	4.93	6.61	8.53	4.11	2.36	2.70	2.77
Net earnings percentage on net sales	3.6	6.1	13.1	8.2	2.3	4.6	6.0
Annual expenditures on fixed assets	72,399	76,540	49,997	12,137	4,455	11,191	7,446
Number of employees on payroll	3,471	3,110	3,013	2,778	2,441	2,527	2,768

All per share figures are based on shares outstanding at the end of the respective years.

1969	1968	1967
71,267	62,541	66,192
—	—	—
71,267	62,541	66,192
17,951	14,455	17,511
2,036	1,440	1,673
6,528	6,881	7,506
10,446	6,359	8,510
5,407	3,270	4,300
5,039	3,089	4,210
1.40	0.86	1.17
3,603	3,603	3,602
100	100	100



41,073	21,360	20,655
14,739	14,221	12,485
2.8	1.5	1.7
26,334	7,139	8,170
9,440	9,184	11,464
126,227	124,057	122,643
71,392	65,309	59,111
36,970	21,343	25,686
56.5	43.7	47.8
15,780	17,030	18,480
25,854	24,949	25,463



3,602,603	3,602,603	3,602,603
5,418	6,202	6,402
93.1	94.2	93.8
28,419	27,514	28,028
7.89	7.64	7.78
10,317	8,520	13,630
2.86	2.36	3.78
7.1	4.9	6.4
2,704	2,222	3,671
2,857	2,693	2,590

1976 Results by Quarters

Sales and Earnings '000 omitted

1976 Quarterly	Net Sales	Oper. Profit	Net Earnings
Quarter			
First	\$ 12,151	\$(1,990)	\$(3,193)
Second	41,027	7,688	2,510
Third	39,762	7,390	2,074
Fourth	43,374	9,068	3,476
	\$136,314	\$22,156	\$ 4,867

Net Earnings Per Share

Quarter	1972	1973	1974	1975	1976
First	\$(0.03)	\$0.25	\$0.99	\$1.62	\$(0.88)
Second	0.14	0.55	1.20	1.32	0.69
Third	0.14	0.52	1.59	0.33	0.58
Fourth	0.20	0.79	0.36	(1.49)	0.96
	\$0.45	\$2.11	\$4.14	\$1.78	\$1.35

OUR CLOSED CYCLE BLEACHED KRAFT PULP MILL

The diagram on the opposite foldout illustrates the principal stages of the bleached kraft pulping process.

The closed cycle for water used in our new mill has been superimposed in the diagram over the process used in our first kraft mill in order to illustrate the essential differences between the two systems. The solid colored arrows represent the main flows of process water. As well as these flows, substantial quantities of fresh water are used for such purposes as cooling. Since the fresh water flows are not part of the closed cycle system and do not come into contact with contaminated liquids, they have been omitted from the diagram. Many auxiliary functions, such as steam and electric power generation, have also been omitted to provide a clearer understanding of the basic operation. While the basic process may appear relatively straightforward, implementation of this process on a large scale involves a wide range of technology, from simple brick work to atomic physics.

- 1 Wood Chips**, the basic raw material: Essentially, wood consists of the following: cellulose fibre or pulp; lignin, which in its natural state is the binder in the tree holding the fibres together; various liquids recovered in our process as valuable by-products, such as turpentine and tall oil; and water.
- 2 Digesting** the wood chips, often referred to as cooking or pulping: In the digester the cellulose fibres are freed by dissolving the lignin in a heated chemical pulping fluid.
- 3 Pulp Washing and Screening:** In this phase of the process, dissolved lignin and pulping chemicals are flushed out. In our first mill, clean water is used for this purpose. In our new mill, however, flushing is done with waste water from the bleach plant which is the first major deviation from standard practice. The waste liquid from this washing stage, in both mills, is treated and reused. Our new mill uses a more modern diffusion washing principle, shown in the diagram, as opposed to drum washers used in the first mill.
- 4 Bleaching:** In this operation, any residual lignin in the pulp is dissolved and flushed out in several stages. The chemicals used for this purpose generate salt in the waste water as discussed in items 7 and 8. Using this waste water in the diffuser, shown in illustration No. 3 and subsequently removing the salt, made the closed cycle system possible. The new system uses a modified bleaching technique which requires much less process water than conventional bleaching methods. This represents the second major deviation from standard practice.
- 5 Dewatering, Drying, Baling and Shipping:** The principles are identical for both mills, with the latest improvements incorporated in our new mill.
- 6 Chemical Recovery:** Spent waste liquids from the pulping process are concentrated, treated and subsequently incinerated in the recovery boiler. Lignin and other organic matter are burned in this process, while the pulping chemicals are recovered. The heat liberated by incinerating the organic matter is used for process steam and electrical power generation.
- 7 Pulping Chemical Regeneration:** After further treatment in this stage, the pulping chemicals in a conventional mill are ready for reuse in the digester. In our new mill, however, an extra treatment is required to remove salt, which has been picked up in the pulp bleaching stage.
- 8 Chemical De-Salting System:** Since salt would build up to intolerable levels in the pulping chemical flow, it is removed at this stage. This is the third major deviation from standard practice. The pulping chemicals for our new mill are now ready for reuse in the digester.
- 9 Bleaching Chemical Regeneration:** Some of the bleaching chemicals for both kraft mills are generated in our chemical plant. We plan to reuse the salt removed in the de-salting system as raw material in our chemical regeneration process. The simplified atomic model shown here symbolizes the chemical reaction that takes place in this process.
- 10 Effluent Treatment:** Spent waste water from our first kraft mill is treated in this facility. Such treatment is not required for any direct discharge from our new mill and essentially only clean water leaves the mill.
- 11 Water Treatment:** River water is purified for use in our kraft mills. Since our new mill uses far less treated process water and recycles the bleach plant waste water, the existing facility is adequate to serve both mills.





WOOD CHIPS



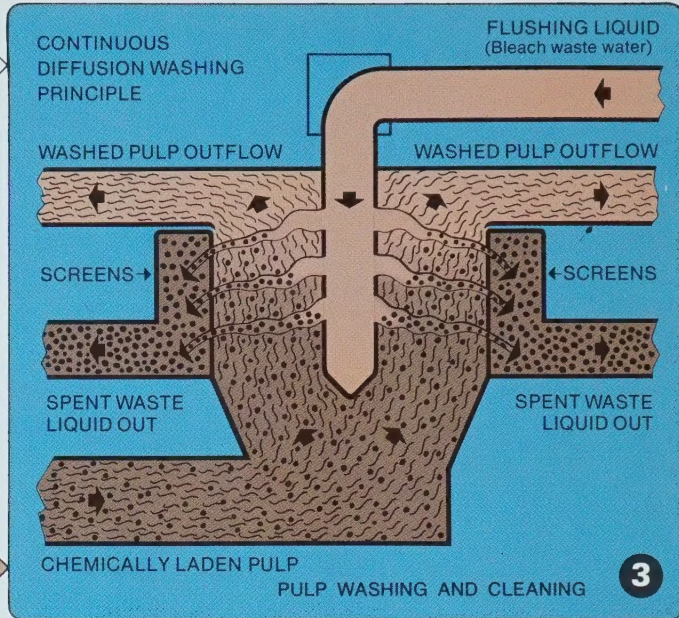
DIGESTING

Digester shown here under construction in 1975

SODIUM SULPHATE

RECYCLED WATER

WET PULP



DILU
EFF
NOV
CON
SAL



CHEMICAL RECOVERY



CLEAN WATER



PULPING CHEMICAL REGENERATION

PULPING CHEMICALS RECYCLED

INSOLUBLE SOLIDS

FRESH WATER

TREATED DILUTED CHEMICALS CONTAINING SALT

LIMESTONE



CHEMICAL DE-SALTING SYSTEM

DILUTED, DE-SALTED PULPING CHEMICALS RECYCLED



OUR NEW CLOSED CYCLE BLEACHED KRAFT PULP MILL

This diagram compares the principal water flows of our two kraft pulp mills

- Our new kraft mill
- Our first kraft mill
- Common to both mills

Width of colored arrows approximate relative water flows

